

REMARKS

Claims 1-13 are all the claims pending in the application. Tables 1 and 2 at pages 15-16 of the present specification have been amended to correct a typographical error. Support for the correction can be found, for example, at page 7, lines 18-20, of the present specification. Claims 4, 6, 7 and 12 have been amended and new claim 13 has been added. Claims 4, 6, 7 and 12 have been amended to prevent the claims from improperly depending from another multiple dependent claim. Support for new claim 13 can be found, for example, in the Examples of the present application.

Entry of the above amendments is respectfully requested.

Initially, Applicants thank the Examiner for acknowledging Applicants' claim to priority under 35 U.S.C. §119, and for confirming receipt of the priority document from the International Bureau.

I. Claim Objections

On page 2 of the Office Action, claims 4, 6-8 and 12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiply dependent claim. See MPEP § 608.0 1(n).

Applicants have amended claims 4, 6, 7 and 12 to depend from claim 1 or 2. Accordingly, Applicants submit that the objection has been overcome and respectfully request that the objection be withdrawn.

II. Response to rejection of claim 9 under 35 U.S.C. § 102(b)

On page 2 of the Office Action, claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda et al. (U.S. Patent 4,956,269).

Applicants respond as follows.

Ikeda relates to silver halide color photographic materials. Ikeda's photographic film is opaque because it essentially contains a layer that blocks transparent light, i.e., an "antihalation layer". As disclosed at line 66 at column 58 to line 8 at column 59 of Ikeda, an antihalation layer is generally and essentially used in photographic films. Accordingly, a change in color tone or coloration cannot be visibly detected by using membranes disclosed in Ikeda.

In view of the above, Applicants respectfully submit that Ikeda does not teach or suggest the present invention, and therefore respectfully request that the rejection be withdrawn.

III. Response to rejection of claims 1-5 and 9-11 under 35 U.S.C. § 103(a)

On pages 3-4 of the Office Action, claims 1-5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holger et al. (GB 2,200,989) and Kerschensteiner (WO 97/05482).

Applicants respond as follows.

Holger's process contains the steps of reducing Fe^{3+} ion by a thiol compound, and then detecting the reduced Fe^{2+} ion by using a ligand that selectively reacts with the Fe^{2+} ion. Apparently, the Fe ion and the ligand for the reduced Fe ion are essential in the process of Holger.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/786,883

In contrast, in the process of the present invention, a metal or a metal compound which is hardly ionizable, even in the presence of water, is used and no ligand is applied. This is because the process of the present invention does not use a reduction process which is essential in the Holger's process. Therefore, Holger's process is totally different from the present invention from the viewpoint of methodology. In addition, in the present invention, a particle is used which is hardly ionized under an aqueous condition and can maintain a particle structure. A soluble particle (i.e., a readily ionizable) such as silver nitrite cannot be used in the present invention.

An advantage of the present invention is convenient handling of the claimed membrane as compared to the process of Holger. An aqueous solution as a detection agent is required in the process of Holger, while in the process of the present invention, detection can be carried out by solely using a dried membrane, and therefore, the membrane is conveniently stored and handled.

With regard to Kerschensteiner, a sol suspension (or dispersion) of a colloidal metal is used. In the dispersion, monodispersed colloids will flocculate in the presence of a thiol compound to provide a change in color. For aggregation of the particles, mobility of the particles is essential, and for this reason, the dispersion of the particles is used in the process of Kerschensteiner. In other words, in the process of Kerschensteiner, larger aggregated particles are formed on the basis of freely movable particles.

In contrast, in the process of the present invention, a dried membrane is used, and the particles in the membrane are enclosed in a gel matrix of a hydrophilic

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/786,883

polymer and their mobility is highly restricted, which is based on a different technical idea from Kerschensteiner.

The present invention is more advantageous as compared to the process of Kerschensteiner at least in sensitivity, storability, and easy handling property. Accordingly, in the present invention, about 1 μ l of a sample containing a thiol compound is dropped on the surface of the membrane, whereas in the process of Kerschensteiner, a significantly larger scale of measurement is basically intended as shown in the Examples.

In addition, in the process of Kerschensteiner, a suspension containing microparticles of a metal will give auto-aggregation due to gravitation, which causes the problem of poor storability. In contrast, in the process of the present invention, the membrane in a dried state will cause almost no change after storage for a prolonged period.

Further, in the process of Kerschensteiner, the use of an agent in a form of a liquid (as a suspension) is essential, whereas in the process of the present invention, detection can be achieved by solely using the membrane in a dried state, which achieves higher storability and convenience in handling.

In view of the above, Applicants respectfully submit that Holger and Kerschensteiner fail to teach or suggest the present invention. Accordingly, withdrawal of the rejection is respectfully requested.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/786,883

issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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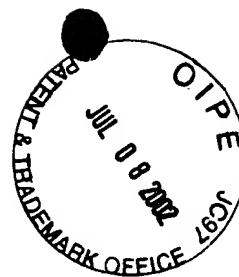
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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification has been changed as follows:

Page 15, Table 1:

Table 1

Sample No.	Metal and/or metal compound			Hydrophilic binder		Cross-linking agent		Support
	Content ¹	Mean particle size μm	Coated amount	Content ²	Film thickness	Content ³	Coated amount	Content ⁴
101	A	0.01 [mm] μm	0.04 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
102	A	0.01 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
103	B	0.05 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
104	C	0.05 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
105	D	0.05 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
106	D	0.09 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
107	D	0.50 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
108	D	1.00 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
109	E	1.00 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
110	F	0.01 [mm] μm	0.37 g/m ²	G	7.0 μm	L	0.60 g/m ²	N
111	F	0.01 [mm] μm	0.37 g/m ²	G	3.0 μm	L	0.60 g/m ²	N
112	F	0.03 [mm] μm	0.37 g/m ²	G	1.0 μm	L	0.60 g/m ²	N
113	A	0.01 [mm] μm	0.37 g/m ²	H	7.0 μm	L	0.60 g/m ²	N
114	A	0.01 [mm] μm	0.37 g/m ²	I	7.0 μm	L	0.60 g/m ²	N
115	A	0.01 [mm] μm	0.37 g/m ²	J	7.0 μm	L	0.60 g/m ²	N
116	A	0.01 [mm] μm	0.37 g/m ²	K	7.0 μm	K	0.60 g/m ²	N
117	A	0.01 [mm] μm	0.37 g/m ²	G	7.0 μm	L	2.40 g/m ²	O
118	A	0.01 [mm] μm	0.18 g/m ²	G	7.0 μm	L	2.40 g/m ²	O
119	A	0.01 [mm] μm	0.18 g/m ²	G	5.0 μm	L	1.70 g/m ²	O
120	A	0.01 [mm] μm	0.18 g/m ²	G	3.0 μm	L	1.00 g/m ²	O

Page 16, Table 2:

Table 2

Sample No.	Metal and/or metal compound			Hydrophilic binder		Cross-linking agent		Support Content ⁴
	Content ¹	Mean particle size μm	Coated amount	Content ²	Film thickness	Content ³	Coated amount	
121	A	0.01 [mm] μm	0.18 g/m ²	G	1.0 μm	L	0.34 g/m ²	O
122	A	0.01 [mm] μm	0.18 g/m ²	G	0.5 μm	L	0.17 g/m ²	O
123	A	0.01 [mm] μm	0.18 g/m ²	G	1.0 μm	L	0.34 g/m ²	P
124	A	0.01 [mm] μm	0.18 g/m ²	G	1.0 μm	L	0.34 g/m ²	Q
125	A	0.01 [mm] μm	0.18 g/m ²	G	1.0 μm	L	0.34 g/m ²	R
126	A	0.01 [mm] μm	0.18 g/m ²	G	0.5 μm	L	0.17 g/m ²	O
127	A	0.01 [mm] μm	0.18 g/m ²	G	1.0 μm	L	0.34 g/m ²	P
128	A	0.01 [mm] μm	0.18 g/m ²	G	1.0 μm	L	0.34 g/m ²	Q
129	A	0.01 [mm] μm	0.18 g/m ²	G	1.0 μm	L	0.34 g/m ²	R

IN THE CLAIMS:

The claims are amended as follows:

4. (amended) The method according to [any one of claims] claim 1 [to 3] or 2, wherein said metal or a metal constituting said metal compound is a metal selected from the group consisting of a metal of Group VIb, Group VIIb, Group VIII, Group Ib, Group IIb, Group VIa and Group VIIa in the periodic table of elements.

6. (amended) The method according to [any one of claims] claim 1 [to 5] or 2, wherein the thiol group-containing compound is a compound selected from the group consisting of an alkylmercaptan, an arylmercaptan, an amino acid and a derivative thereof, a peptide compound, and a protein.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/786,883

7. (amended) The method according to [any one of claims] claim 1 [to 6] or 2, wherein the sample containing the thiol group-containing compound is a biosample isolated or collected from a mammal including a human.

12. (amended) A thin membrane for use in the method according to [any one of claims] claim 1 [to 8] or 2.

Claim 13 has been added as a new claim.